

# Exophthalmos

## From the Standpoint of the Otolaryngologist

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EXOPHTHALMOS may be classified as of two kinds, one due to inflammatory process and the other to new growth.

Invasion of walls and the contents of the orbit by infection arising in the paranasal sinuses is not common. The incidence is highest in children and young adults, probably because infection of the upper respiratory tract is common in this age group. The infection spreads from the sinus to the orbit by direct extension or by a phlebitic process through the bony walls. In infants and young children the ethmoid cells are most often the means of invasion, principally because the ethmoid labyrinth, in contrast to the other nasal sinuses, is reasonably well developed at birth and is separated from the orbit by the very thin lamina papyracea. This paper-like bone is likely to have many dehiscences that permit easy extension of the infection into the orbit. In young adults, extension is most often through the thin floor of the frontal sinus into the orbit, and the complication is most likely to occur in beetle-browed persons with large frontal sinuses.

Osteitis occurs first, then edema of the orbit. Suppuration may not take place. When bone necrosis develops, subperiosteal abscess results and it may rupture through the lid or into the orbital contents through the periosteum and cause the formation of orbital abscess or cellulitis. The more severe forms are probably due to septic venous thrombosis and the cavernous sinus or meninges become involved before suppuration can occur into the orbit.<sup>1</sup>

Simple edema of the orbit is marked by orbital pain, a rise in temperature and the appearance of a dusky red color and soft edematous condition of the lids without impairment of motion of the globe and with no change in vision. If a subperiosteal abscess forms, the edema of the lids increases and they become hard, red and tender and the pain increases. Movement of the eyeball is painful and limited. If the abscess ruptures through the frontal floor, the globe is displaced downward and forward, and if the lamina papyracea is the site of perforation the globe is moved forward and outward. When pus forms in the orbit proper, there is very pronounced

*• Exophthalmos may be due to an inflammatory process or to tumor formation. Inflammatory processes are most likely to occur in children and young adults. Tumors are the most common cause of exophthalmos in adults.*

*Since the advent of chemotherapy and the antibiotics, rarely does orbital cellulitis develop from sinus infection.*

*Tumors causing exophthalmos are likely to be benign if they arise from the frontal sinus and malignant if they arise from the maxillary and ethmoid sinuses.*

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exophthalmos, extreme chemosis of the conjunctiva, immobility of the globe, interference with vision and septic fever.<sup>1</sup>

Since the advent of chemotherapy and the antibiotics, the inflammatory process rarely develops into abscess formation and drainage of orbital cellulitis secondary to acute ethmoiditis is not often necessary. However, it is recommended that in acute frontal sinusitis with orbital cellulitis, drainage by trephination through the floor of the sinus be carried out early.

### BENIGN AND MALIGNANT TUMORS

Benign new growths of the paranasal sinuses that may extend into the orbit almost always involve the frontal sinus and most commonly are mucocoeles or osteomas.

A mucocoele is a secreting cyst which, through pressure, causes atrophy of the wall of the sinus, permitting the tumor to extend into the orbit and displace the globe. Such tumors usually grow slowly and rarely cause inflammation.

Osteomas are far less common. Over 80 per cent arise from the frontal sinus. When small and contained within the sinus the tumors produce no symptoms. When large they cause pressure atrophy of the wall of the sinus and displacement of the globe. They appear as bony tumors on x-ray films. Mucocoeles and osteomas should be completely removed by means of an external fronto-ethmoid operation.

Sarcoma and carcinoma occur with about equal

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frequency in the paranasal sinuses. Sarcoma may develop at any age but carcinoma seldom occurs before the age of 40. The maxillary sinus is the most common site of origin, with the ethmoid cells next. Rarely is the frontal sinus involved. Sarcomas may be of several kinds — spindle-celled, round-celled, lymphosarcoma, giant-celled, osteosarcoma and angiosarcoma. Carcinomas are usually squamous cell epitheliomas, but adenocarcinomas and basal-celled forms also occur. Squamous cell carcinoma is the malignant growth that occurs most often in the nasal fossae and paranasal sinuses. It occurs more frequently in the maxillary sinus than in all the other paranasal sinuses combined.<sup>1</sup>

Malignant new growths of the nasopharynx may spread into the sinuses and invade the orbit. However, this is usually a very late complication.

In the case of malignant new growths beginning in the antrum there is pain in the upper teeth and

cheek, followed by swelling in the cheek, anesthesia of the skin and bulging of the naso-antral wall with upward displacement of the orbital contents. Ethmoid growths soon break into both the nasal cavity and the orbit and cause epiphora, diplopia, exophthalmos with a palpable tumor in the orbit, nasal obstruction, foul bloody discharge, epistaxis and severe pain. Metastasis to the upper deep cervical lymph glands, usually on the side first involved, often to both sides later, takes place early or late depending on the degree of malignance.<sup>1</sup> The prognosis is very grave in such cases. If metastasis has occurred the growth is subject only to palliative radiation. With less malignant forms, wide surgical removal offers some hope.

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#### REFERENCE

1. Morrison, W. W.: Diseases of the Ear, Nose and Throat.

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### Insist on National Health Insurance

SPOKESMEN for the AFL and the CIO have informed the House Interstate and Foreign Commerce Committee they still favor a compulsory national health plan as "the only adequate answer to the need of our people." Not all labor witnesses took the all-or-nothing position. A. J. Hayes, president of the International Association of Machinists and former member of the Truman Health Commission, testified: "Since it appears that the chances of achieving the ultimate solution are fairly remote, we will cooperate in any program which is a step in the right direction."

—A.M.A. Washington Letter